CLAIMS

[1] A switched capacitor filter for receiving a current signal and outputting a voltage signal, the switched capacitor filter comprising:

a first capacitor provided between an input terminal for the current signal and a reference voltage;

a switched capacitor circuit provided between the input terminal and the first capacitor; and

a second capacitor provided in parallel to the first capacitor and the switched capacitor circuit.

[2] The switched capacitor filter of claim 1, wherein the switched capacitor circuit includes

first and second terminals,

third and fourth capacitors each having one end to which a reference voltage is supplied and substantially the same capacitance, and

a switching section for switching a connection state between the other end of each of the third and fourth capacitors and an associated one of the first and second terminals,

wherein when the switching section connects the other end of the third capacitor to the first terminal, the switching section connects the other end of the fourth capacitor to the second terminal, and when the switching section connects the other end of the third capacitor to the second terminal, the other end of the fourth capacitor to the first terminal, and

wherein the capacitance of the second capacitor is larger than respective capacitances of the third and fourth capacitors.

[3] The switched capacitor filter of claim 2, wherein each of the first through fourth capacitors is a MOS capacitor.

[4] The switched capacitor filter of claim 1, wherein the switched capacitor circuit includes

a first terminal provided on a side of the first capacitor,

a second terminal provided on a side of the input terminal,

a plurality of capacitors each having one end to which a reference voltage is supplied and substantially the same capacitance, and

a switching section for switching a connection state between the other end of each of the plurality of capacitors and an associated one of the first and second terminals,

wherein, while maintaining connection between the other end of one of the plurality of capacitors and the second terminal, when the switching section connects the other end of one of other two of the plurality of capacitors to the first terminal, the switching section connects the other end of the other one of the other two to the second terminal.

[5] The switched capacitor filter of claim 4, wherein each of the first and second capacitors and the plurality of capacitors is a MOS capacitor.

[6] A feedback system for feeding back an output clock generated on the basis of an input clock to make the output clock have a predetermined characteristic, the feedback system comprising:

a charge pump circuit for generating a charge current, on the basis of a phase difference between the input clock and a fed-back clock;

a loop filter for receiving the charge current as an input; and

an output clock generator circuit for generating the output clock, on the basis of an output signal from the loop filter,

wherein the loop filter includes

a first capacitor provided between an input terminal for the charge current and a reference voltage,

a switched capacitor circuit provided between the input terminal and the first capacitor, and

a second capacitor provided in parallel to the first capacitor and the switched capacitor circuit.

[7] The feedback system of claim 6, wherein the switched capacitor wherein the switched capacitor circuit includes

first and second terminals,

third and fourth capacitors each having one end to which a reference voltage is supplied and substantially the same capacitance, and

a switching section for switching a connection state between the other end of each of the third and fourth capacitors and an associated one of the first and second terminals,

wherein when the switching section connects the other end of the third capacitor to the first terminal, the switching section connects the other end of the fourth capacitor to the second terminal, and when the switching section connects the other end of the third capacitor to the second terminal, the other end of the fourth capacitor to the first terminal, and

wherein the capacitance of the second capacitor is larger than respective capacitances of the third and fourth capacitors.

[8] The feedback system of claim 7, further comprising a control clock generator circuit for generating, on the basis of a falling of the input clock, first and second control clocks having an inverse correlation with each other and third and fourth control clocks corresponding to inverse clocks of the first and second control clocks, respectively,

wherein the switching section includes

a switch for switching a connection state between the other end of the third capacitor and the first terminal according to the first control clock,

a switch for switching a connection state between the other end of the fourth capacitor and the first terminal according to the second control clock,

a switch for switching a connection state between the other end of the third capacitor and the second terminal according to the third control clock, and

a switch for switching a connection state between the other end of the fourth capacitor and the second terminal.

[9] The feedback system of claim 7, wherein each of the first through fourth capacitors is a MOS capacitor.

[10] The feedback system of claim 6, wherein the switched capacitor circuit includes

a first terminal provided on a side of the first capacitor,

a second terminal provided on a side of the input terminal,

a plurality of capacitors each having one end to which a reference voltage is supplied and substantially the same capacitance, and

a switching section for switching a connection state between the other end of each

of the plurality of capacitors and an associated one of the first and second terminals,

wherein, while maintaining connection between the other end of one of the plurality of capacitors and the second terminal, when the switching section connects the other end of one of other two of the plurality of capacitors to the first terminal, the switching section connects the other end of the other one of the other two to the second terminal.

[11] The feedback system of claim 10, further comprising a control clock generator circuit for generating, on the basis of a falling of the input clock, a plurality of control clocks having different phases from each other and the number of the plurality of control clocks corresponds to the number of the plurality of capacitors and a plurality of inversion control clocks corresponding to inversed clocks of the plurality of control clocks,

wherein the switching section includes

a plurality of switches, provided so as to correspond to the plurality of capacitors, respectively, each switching a connection state between the other end of an associated one of the plurality of capacitors and the first terminal according to one of the plurality of control clocks corresponding to the associated one of the plurality of capacitors, and

a plurality of switches, provided so as to correspond to the plurality of capacitors, respectively, each switching a connection state between the other end of an associated one of the plurality of capacitors and the second terminal according to one of the plurality of control clocks corresponding to the associated one of the plurality of capacitors.

[12] The feedback system of claim 10, wherein each of the first and second capacitors and the plurality of capacitors is a MOS capacitor.